ABSTRACT OF THE DISCLOSURE

The present invention relates to an optical communication system including a structure for suppressing deterioration of transmission characteristics of signals added at each of nodes arranged in an optical transmission line, and a method of assigning signal channels. The optical communication system includes the optical transmission line for transmitting signals of plural channels between a transmitter and a receiver, and one or more nodes are arranged at predetermined positions of the optical transmission line. Each of the nodes includes an ADM for adding signals of a predetermined channel to the optical transmission line, and a signal channel at which the absolute value of accumulated-dispersion up to the receiver becomes smallest among signal channels which can be added is assigned to each of the nodes in advance or dynamically.